

AMENDMENTS TO THE CLAIMS

Claims 1-20 (Cancelled).

21. (Previously Presented) An isolated nucleic acid molecule comprising a polynucleotide sequence selected from the group consisting of:

(a) an isolated polynucleotide encoding a polypeptide comprising amino acids 1 to 541 of SEQ ID NO:2; and

(b) an isolated polynucleotide encoding a polypeptide comprising amino acids 2 to 541 of SEQ ID NO:2.

22. (Previously Presented) The isolated nucleic acid molecule of claim 21, wherein said polynucleotide is (a).

23. (Currently Amended) The isolated nucleic acid molecule of claim 22, wherein said polynucleotide comprises of nucleotides 153 to 1775 of SEQ ID NO:1.

24. (Previously Presented) The isolated nucleic acid molecule of claim 21, wherein said polynucleotide is (b).

25. (Previously Presented) The isolated nucleic acid molecule of claim 24, wherein said polynucleotide comprises nucleotides 156 to 1775 of SEQ ID NO:1.

26. (Previously Presented) A recombinant vector comprising the isolated nucleic acid molecule of claim 21.

27. (Previously Presented) An isolated recombinant host cell comprising the vector sequence of claim 26.

28. (Previously Presented) A method of making an isolated polypeptide comprising:

(a) culturing the isolated recombinant host cell of claim 27 under conditions such that said polypeptide is expressed; and

(b) recovering said polypeptide.

29. (Previously Presented) The isolated polynucleotide of claim 21 wherein said nucleic acid sequence further comprises a heterologous nucleic acid sequence.

30. (Previously Presented) The isolated polynucleotide of claim 29 wherein said heterologous nucleic acid sequence encodes a heterologous polypeptide.

31. (Previously Presented) The isolated polynucleotide of claim 30 wherein said heterologous polypeptide is the Fc domain of human immunoglobulin.

32. (Previously Presented) An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence that is at least 95.0% identical to a polynucleotide sequence provided in claim 21, wherein percent identity is calculated using a CLUSTALW global sequence alignment using default parameters, wherein said polynucleotide encodes a polypeptide that has tubulin tyrosine ligase activity.

33. (Previously Presented) An isolated nucleic acid molecule comprising a polynucleotide encoding a polypeptide that is at least 95.0% identical to amino acids 2 to 541 of SEQ ID NO:2, wherein percent identity is calculated using a CLUSTALW global sequence alignment using default parameters, wherein said encoded polypeptide has tubulin tyrosine ligase activity.

34. (Previously Presented) An isolated polynucleotide encoding a polypeptide consisting of at least 50 contiguous amino acids of SEQ ID NO:2.

35. (Previously Presented) The isolated nucleic acid molecule of claim 34, wherein said polynucleotide consists of at least 150 contiguous nucleotides of SEQ ID NO:1.

36. (Previously Presented) An isolated nucleic acid molecule comprising the cDNA clone contained in plasmid BGS-42 clone A in ATCC Deposit No. PTA-4454.

37. (Previously Presented) An isolated nucleic acid molecule comprising the cDNA clone contained in plasmid BGS-42 clone B in ATCC Deposit No. PTA-4454.

38. (Previously Presented) An isolated nucleic acid molecule comprising the cDNA clone contained in plasmid BGS-42 clone C in ATCC Deposit No. PTA-4454.

39. (Previously Presented) An isolated polynucleotide encoding a polypeptide comprising amino acids 73 to 365 of SEQ ID NO:2.

40. (Previously Presented) The isolated nucleic acid molecule of claim 39, wherein said polynucleotide comprises nucleotides 369 to 1247 of SEQ ID NO:1.

41. (Previously Presented) An isolated polynucleotide encoding a polypeptide comprising amino acids 133 to 374 of SEQ ID NO:2.

42. (Previously Presented) The isolated nucleic acid molecule of claim 41, wherein said polynucleotide comprises nucleotides 549 to 1274 of SEQ ID NO:1.

43. (Currently Amended) An isolated polynucleotide which represents the complementary sequence of (a)[[.]] or (b) of claim 21.

44. (Previously Presented) The isolated nucleic acid molecule of claim 21 operatively linked to nucleotides -2057 to -1 of the sequence provided in Figures 7A-B.

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45. (Currently Amended) The isolated nucleic acid molecule of claim 44 wherein at least one nucleotide but not more than 10 nucleotides are mutated in a region selected from the group consisting of: a.) from about nucleotide -1968 to about -1746 of the sequence provided in Figures 7A-B; b.) from about nucleotide -1232 to about -936 of the sequence provided in Figures 7A-B; and c.) from about nucleotide -727 to about -470 of the sequence provided in Figures 7A-B, wherein at least one or more of said regions are not methylated or are at least methylated to a lesser extent than the non-mutated sequence.

46. (Currently Amended) The isolated nucleic acid molecule of claim 44 wherein a region selected from the group consisting of: a.) from about nucleotide -1968 to about -1746 of the sequence provided in Figures 7A-B; b.) from about nucleotide -1232 to about -936 of the sequence provided in Figures 7A-B; and c.) from about nucleotide -727 to about -470 of the sequence provided in Figures 7A-B; is deleted.

47. (Previously Presented) An isolated nucleic acid molecule comprising nucleotides 1 to 2057 of SEQ ID NO:27.

48. (Previously Presented) An isolated nucleic acid molecule comprising the nucleotide sequence provided as SEQ ID NO:9.

49. (Previously Presented) An isolated nucleic acid molecule comprising the nucleotide sequence provided as SEQ ID NO:10.

50. (Previously Presented) An isolated nucleic acid molecule comprising the nucleotide sequence provided as SEQ ID NO:11.

51. (Previously Presented) An isolated nucleic acid comprising a polynucleotide encoding amino acids 2 to 541 of SEQ ID NO:2, wherein the amino acid located at amino acid position 515 is a glutamic acid.

52. (Previously Presented) An isolated nucleic acid comprising a polynucleotide encoding amino acids 2 to 541 of SEQ ID NO:2, wherein the amino acid located at amino acid position 524 is a serine.

53. (Previously Presented) An isolated polynucleotide encoding a polypeptide comprising at least 394 contiguous amino acids of SEQ ID NO:2.

54. (Previously Presented) The isolated nucleic acid molecule of claim 53, wherein said polynucleotide comprises at least 1182 contiguous nucleotides of SEQ ID NO:1.

55. (Previously Presented) An isolated polynucleotide that hybridizes under stringent conditions to the polynucleotide encoding amino acids 2 to 541 of SEQ ID NO:2, wherein said

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stringent conditions are as follows: an overnight incubation at 42 degree C in a solution comprising 50% formamide, 5x SSC (750 mM NaCl, 75 mM trisodium citrate), 50 mM sodium phosphate (pH 7.6), 5x Denhardt's solution, 10% dextran sulfate, and 20 µg/ml denatured, sheared salmon sperm DNA, followed by washing the filters in 0.1x SSC at about 65 degree C, wherein said polynucleotide encodes a polypeptide that has tubulin tyrosine ligase activity.